

Western Kentucky University
School of Engineering and Applied Sciences
AMS 271: Industrial Statistics

Instructor: Dr. Daniel Jackson

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Office: Online only

Office Hours: Appointment only for Spring of 2019

Phone: email contact only

Pre-requisites/Co-requisites: MATH 116 or equivalent

Credit: 3 credit hours

Course Description: A study of basic statistical techniques typically used in industry for purposes quality, material science research, and system planning and operation.

General Course Goals:

1. Develop an awareness of the background, concepts, characteristics, measurements, and use of statistics in an industrial setting.
2. Be familiar with basic probability and variable statistics.
3. Be able to create graphs and work with data sets in Excel of other statistical applications.
3. Understand data collection techniques in terms of bias and randomization.
4. Understand SPC in terms of creating appropriate control charts and analyzing those charts.
5. Understand acceptance sampling techniques and commonly used plans.
6. Understand the difference between variable and attribute measures.
7. Be able to use the normal distribution to determine area and compare sample distributions.
8. Be familiar with the managerial side of industrial statistics and performance excellence.

Major Topics to be Covered in the Course:

Introduction to industrial statistics

History

Definitions

Measurements and Graphic plotting techniques

Fundamentals of statistics

Types of data

Frequency distributions

Measures of central tendency and dispersion

Concept of population and sample

The normal curve

Probability

Discrete probability distributions

Binomial

Poisson

Hypergeometric

Continuous probability distributions

Normal

Exponential

SPC and process analysis

Variable Control Charts

Process Analysis

Attribute Control Charts

Acceptance Sampling

Managerial aspects and trends in industrial statistics

Required Materials: Quality Improvement, Dale Besterfield, Latest edition, ISBN 9780132624411

Attendance Policies/Performance Expectations:

The student is expected to allocate adequate time throughout the semester to be prepared for all the requirements of the course. Participation in the discussion boards is required and monitored as indicated. These discussions will serve as a valuable resource in completing homework and understanding course content.

Grading:

Test One 30%
Test Two 30%
Quizzes 20%
Assignments 10%
Discussion 10%

90s = A,
80s = B,
70s = C,
60s = D,
<60 = F

Important Notice Regarding Grading: The *Total* score shown in Blackboard does not represent your true score. You cannot calculate your true score or grade using the Total shown in Blackboard!! Grades are based solely on the percentages shown above in Grading.

Title IX Misconduct/Assault Statement

Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) at <https://wku.edu/eoo/documents/titleix/wkutitleixpolicyandgrievanceprocedure.pdf> and

Discrimination and Harassment Policy (#0.2040) at https://wku.edu/policies/hr_policies/2040_discrimination_harassment_policy.pdf.

Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Title IX Coordinator, Andrea Anderson, 270-745-5398 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121.

*Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and **MUST** report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center at 270-745-3159.*

ADA Accommodation Statement

In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, room 1074 of the Student Success Center. The phone number is 270.745.5004. or email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a letter of accommodation from The Student Accessibility Resource Center.